DOCUMENT RESUME

ED 302 827 CS 009 478

AUTHOR Anthony, Helene M.; And Others
TITLE Reading Comprehension Research: A Selected Review. Technical Report No. 448.
INSTITUTION Bolt, Beranek and Newman, Inc., Cambridge, Mass.; Illinois Univ., Urbana. Center for the Study of Reading.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE Jan 89
CONTRACT OEG-0087-C1001
NOTE 30p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Basal Reading; Elementary Secondary Education; Metacognition; Reader Text Relationship; *Reading Comprehension; *Reading Instruction; *Reading Processes; *Reading Research; Social Influences; *Teaching Methods; Vocabulary Skills

ABSTRACT

This research review is an examination of representative studies on the nature of the reading process and of various instructional methods in reading deemed to be of interest to classroom teachers of reading. The review provides both a theoretical perspective and related empirical evidence to guide instructional practice and discusses the ways in which readers, text, and context interest and influence children's comprehension of text. The review begins with a brief historical overview of reading research, which provides a framework for discussing studies related to the characteristics of readers, text, and the social context. One figure is included, and 144 references are appended. (Author/MS)

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# CENTER FOR THE STUDY OF READING

## A READING RESEARCH AND EDUCATION CENTER REPORT

**Technical Report No. 448**

## READING COMPREHENSION RESEARCH: A SELECTED REVIEW

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**January 1989**

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**The work upon which this publication was based was supported in part by the Office of Educational Research and Improvement under Cooperative Agreement No. OEG 0087-C1001. The publication does not necessarily reflect the views of the agency supporting the research.**

CS009478

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## Abstract

There is an ever-expanding body of research studies examining both the nature of the reading process and various instructional methods in reading. This review is a description of representative studies deemed to be of interest to classroom teachers of reading. The review provides both a theoretical perspective and related empirical evidence to guide instructional practice. The review begins with a brief historical overview of reading research. This overview provides a framework for discussing studies related to the characteristics of readers, characteristics of text, and characteristics of the social context.

# READING COMPREHENSION RESEARCH: A SELECTED REVIEW

Research in reading comprehension has received more attention in the past 15 years than in the previous six decades. In the foreword to *Becoming a Nation of Readers: The Report of the Commission on Reading*, Robert Glaser suggests that the research now available on the reading process can help to identify teaching practices that are effective and to differentiate effective strategies from those that are less useful (Anderson, Hiebert, Scott, & Wilkinson, 1985). This paper will summarize selected research in the area of reading comprehension and describe ways in which these findings should, could, can, and do influence instructional practice. First, we discuss reasons for the reemerging interest in comprehension research. Then we describe the research bases that inform our knowledge of the development of comprehension processes, summarizing both descriptive studies and instructional intervention studies.

## The Emergence of Reading Comprehension Research

The growing number of books concerned with reading comprehension (e.g., Cooper, 1986; Duffy, Roehler & Mason, 1984; Garner, 1987; McNeil, 1987; Oransanu, 1985; Pearson, 1984a; Spiro, Bruce, & Brewer, 1980) and chapters within more general scholarly works in cognition (e.g., Mandl, Stein & Trabasso, 1984) and education (e.g., Wittrock, 1985) attest to the importance ascribed to the processes of reading comprehension.

To what can this increased interest be traced? Our interest in comprehension processes actually can be traced back to the turn of the century when scholars such as Huey (1908), Cattell (1986), and Thorndike (1917) considered reading as a process worthy of intensive and extensive research. This was a period of time during which gestalt psychology, with its emphasis on holistic mental processes, was popular first in Europe and later in the United States. Such a milieu invited the study of reading comprehension as a unified mental event. The research from this era substantiates exactly this view: Research studied holistic mental processes such as the perception of print (Cattell, 1986) and the influence of mental set, or prior knowledge (Huey, 1908).

This early research forged the beginning threads of current reading comprehension research. In fact, reading Huey's (1908) *Psychology and Pedagogy of Reading* may cause modern researchers some embarrassment because we seem to have progressed little beyond his level of understanding. The snail's pace of advances from 1915 to 1970 reflects the continuing influence of the behavioral tradition that dominated psychology during that time. Behaviorism emphasized the study of *observable* behavior or events. Since the reading process was considered to be primarily a *mental* event, it was viewed as a phenomenon outside the scope of experimental psychology. Only those aspects of reading that were observable (not the process itself) became the focus of reading research. Research in reading began to assume a "product orientation," with attention given to accuracy in oral reading and performance on tests of reading skills. These tests portrayed reading comprehension as a large set of discrete, remediable subskills. A result of the close tie to such testing was an undue emphasis on phonics. However, regardless of which was the cause and which the effect, the fact is that these movements complemented one another. While the assessment of the processes of reading comprehension was quite difficult, the assessment of phonic skills such as knowledge of letter sounds, blending skills, auditory perception and discrimination was relatively simple. The comprehension process was treated as a "by-product," since many assumed that comprehension automatically followed once students had "broken the code," and could 'listen to what they themselves said.'

Fortunately for those of us currently concerned with reading comprehension, the field of psychology that had banned reading comprehension as a field of study heralded its return. Only this time it was cognitive psychology rather than behaviorism that held the day (Pearson, 1986). Reading, considered to be one form of problem solving, began to be studied by psychologists, linguists, and anthropologists, in addition to reading educators. New models of reading blossomed during this period. Gough (1972)

and LaBerge and Samuels (1974) proposed bottom-up models emphasizing the flow of information from the text, to visual memory, to auditory memory, to the building of acoustic representations into words to semantic memory and, finally--comprehension. Smith (1971, 1978) and Goodman (1976), on the other hand, developed top-down oriented models that emphasized the influence of internally developed hypotheses about the possible meaning of a text segment, a higher level process, on the lower level processes (e.g., word recognition). Inevitably, other researchers (Rumelhart, 1977; Stanovich, 1980) constructed interactive models which allow the flow of information to switch from bottom-up to top-down depending on the characteristics of the text, context and reader. Further, the nature of assessment in reading came into question, with researchers arguing for an interactive approach that better reflects our knowledge of the reading process (Lipson & Wixson, 1986; Pearson & Valencia, 1987). It is this view of reading which guides the research reported in this review.

Many definitions of reading comprehension have been suggested (for an extensive treatment of definitions, see Johnston, 1983). The definition we have adopted for purposes of discussing reading comprehension research reflects an interactive view of reading in which "reading is the process of constructing meaning through the dynamic interaction among the reader's existing knowledge, the information suggested by the written language, and the context of the reading situation." This definition was proposed by Wixson and Peters (1984) and developed for the Michigan State Board of Education in conjunction with the Michigan Reading Association. It is representative of current trends away from a decoding-only emphasis in which the readers' task is to derive meaning from text and toward a conceptualization of reading as an interactive process in which the reader brings to the task a wealth of knowledge and experiences. Reading comprehension involves interpreting text and constructing meaning in light of this background knowledge, and within a social context that helps to determine the readers' goals, purposes, and expectations.

## The Development of Comprehension Processes: Research Bases

Since reading is an interactive process, it is important to understand those interacting factors that contribute to learners' development of effective reading strategies and desire to read. In other words, it is important to understand the context in which reading occurs. While we recognize the difficulty of considering in isolation factors that exist as part of a broad context, for purposes of this paper, we examine the development of reading comprehension processes in terms of three primary influences: learner characteristics, text characteristics, and the social context in which learning to read occurs. Our decision to treat each separately reflects our desire to give each a complete hearing rather than any claim that they are operationally separate entities. The following sections present selected research on the characteristics of learner, the text, and the social context, respectively. Research discussed includes both descriptive studies and intervention studies designed to change current features of the learners, the text, or social context.

### Learner Characteristics

Learner characteristics involve such factors as background knowledge, metacognitive knowledge, social-cultural background, ability, vocabulary knowledge, motivation, SES, gender, and developmental level. Some of these are amenable to change through instruction; others are not. In this section we examine the research in three areas particularly relevant to instructional issues and responsive to interventions designed to enhance responses to reading comprehension: background knowledge, vocabulary knowledge and metacognitive knowledge.

**Background knowledge.** One of the most well-studied learner-characteristics is background knowledge; not surprisingly, the dominant theme in this work is its effect upon reading comprehension. This research results from such developments in cognitive psychology as the advancement of schema theory contributing to the changing conceptions in research and practice in reading (Anderson & Pearson, 1984). Schema theory is based on the notion that an individual's stored knowledge, what we frequently call long-term memory, is the systematic personal organization of that individual's total

experiences. How we make sense of incoming information is influenced by what we already know. For example, most adults have a well-developed schema for restaurant. There are waiters or waitresses that take your order for food which you get from a menu, and when you have finished eating you pay for your meal. If someone began describing what happened while eating lunch with a friend, you would connect what you were hearing with what you already know about going to a restaurant. As you listened, you would fill the 'slots' in your restaurant schema.

Several studies have shown that one's schemata, or background knowledge, influences how one interprets and remembers text. Anderson, Reynolds, Schallert and Goetz (1977) wrote two passages that were potentially ambiguous for the reader. The majority of subjects in a pilot group interpreted the first passage as being about a prison break and the second, about a card game. Then, 30 male wrestling students and 30 female music students read the two passages. A majority of the wrestling students (64%) interpreted the first passage as a wrestling match, rather than a prison break, and a majority of the music students (74%) perceived the second passage to be friends getting together to play music, rather than a card game. Yet, each group's interpretation of the other passage was the same as that of the pilot group.

One source of background knowledge that influences comprehension is the set of experiences derived from one's own cultural background. To demonstrate the power of such background knowledge, Steffensen, Joag-Dev, and Anderson (1979) asked college students from the United States and from India to read about an American and an Indian wedding ceremony. The students not only were able to recall their native passage more quickly, but they were able to recall more of the elements rated as important by other students who had the same cultural background. Similar cultural findings have been demonstrated for religion (Lipson, 1982) and national culture (Pritzhard, 1987).

Two important studies have demonstrated the role that background knowledge plays in children's comprehension. In the first, Pearson, Hansen, and Gordon (1979) examined how greater knowledge about spiders provided an advantage to one group of second graders. Although these students did not differ from a second group of second graders in their reading ability, they were more successful in answering comprehension questions, particularly inferential questions, after each group read the same selection about spiders. Marr and Gormley (1982) provided further evidence of the power of background knowledge in a study of fourth grade students. Instead of varying the amount of knowledge across groups of students, they had the same students read passages that were equivalent in readability level, but that differed in topic familiarity. Students read passages on familiar topics (i.e., baseball, the mosquito, and apples) and unfamiliar topics (i.e., curling, aphids, and papaya). Topic familiarity influenced students' ability to draw inferences and elaborate upon the texts that they read. In fact, prior knowledge was a better predictor of this ability than a measure of reading ability. Similar results were found in studies by Langer (1984), Langer and Nicolich (1981), and Lipson (1983).

Learners must not only possess background knowledge, but they must also be able to apply the knowledge relevant to the text they are reading. Bransford and his colleagues (Bransford & Johnson, 1972; Bransford & McCarrell, 1974) cleverly demonstrated this necessity using passages purposely written in an ambiguous fashion. In a now classic demonstration of the importance of accessing appropriate background knowledge, adult readers were read a paragraph which began:

> The procedure is really quite simple. First you arrange the items into different groups. Of course one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step . . . (Bransford, 1979, p. 134).

Then the readers were asked to rate the comprehensibility and to recall the passage. The passage was rated as having low comprehensibility, and recall of the passage was quite poor. Yet, only the rare adult does not have the background knowledge to understand a paragraph on this topic, washing

clothes. Thus, it can be seen that to have background knowledge is not sufficient; readers must access appropriate and relevant knowledge to successfully comprehend text.

The studies presented thus far underscore the importance of background knowledge. There is also instructional research that demonstrates the effects on reading comprehension of activating and enhancing learners' background knowledge. Several parallel lines of research have provided the basis for a variety of instruction used to enhance background knowledge. These instructional recommendations can be thought of as: (a) general frameworks for planning activities throughout the comprehension process, (b) specific strategies designed to be used to enhance background knowledge before students engage in reading their text, and (c) student strategies for independently accessing background knowledge and using it appropriately as they read the text.

One of the major implications of the studies of background knowledge is the importance of helping students access relevant information that they may already possess, or to help students build knowledge if they have little or no relevant amount prior to reading a selection. Suggested frameworks for lessons focusing on comprehension instruction suggest that prior to reading, teachers engage in activities designed to help students access or develop appropriate background knowledge. Also, prior to reading a text, teachers ask students to apply their knowledge as they generate predictions about the content of the upcoming reading material. After reading sections of the text or, if reasonable, the entire selection, the frameworks encourage guided reading by questioning students or having students engage in such activities as question asking and summarizing to ensure that students understand the central theme of the story or the major elements of an informational text. Finally, once meaning has been assured, these frameworks provide opportunity to extend or apply concepts learned to new situations.

For example, Au and her colleagues (Au, 1979; Wong & Au, 1985; Au & Kawakami, 1986) have developed two frameworks, one each for narrative and expository selections. Experience-Text-Relationship (ETR) directs teachers to tap into students' *experiences* prior to reading, examine the *text* to ensure students' comprehension of central ideas and then build *relationships* between information in the text and the students' knowledge base. Similarly, Concept-Text-Application (CTA) encourages building background knowledge before reading expository text. However, the C phase focuses specifically on building concepts of ideas central to the texts' theme (e.g., the concept, *monster*, might be discussed prior to reading about the Loch Ness monster) rather than tapping into relevant personal experiences. Then, like the ETR sequence, students are directed to discuss ideas from the *text* to ensure that the meaning is clear, finally, applying concepts from the text to a new situation (e.g., differences between scientific discoveries and fantasies). Other frameworks such as Stauffer's (1969) Directed-Reading-Thinking-Activity (DRTA), stress the importance of using predictions during prereading to promote students' monitoring of their comprehension during the guided reading phase of the lesson.

While these frameworks provide a set of general guidelines for constructing the overall reading comprehension lesson, a related area of research has provided specific instructional strategies to use within these more general lesson frameworks. For example, Langer (1982, 1984) has developed a three-phase PreReading Plan (PReP) that not only builds students' knowledge about central concepts, but also provides teachers with a tool for evaluating the level of their students' knowledge. Initially, the teacher presents students with a word, phrase or picture related to the central idea of the to-be-read text. Students are encouraged to share any associations with the selected topic that come to mind. Second, students are asked to explain their associations. For example, the teacher may ask, "Why did the word *handicap* make you think of wheelchair? Where did that idea come from?" During this phase students are able to listen to their peers' explanations for their associations. This discussion serves the dual purpose of informing the teacher about the sophistication of her students' knowledge base, and allowing students to activate relevant background knowledge, correct misconceptions, and/or enrich current background knowledge. Third, students are given another chance to make associations with the original concept before going on to reading the selection.

Hansen and Pearson's (1983) Inference Training is a questioning technique in which students are encouraged to use their background knowledge to make predictions about what might happen in the text to be read. A prior knowledge question invites students to think of relevant personal experiences (e.g., Have you ever been embarrassed? Tell us about it.). Following a discussion of personal experiences, students are asked to predict how a story character may behave in a similar situation (e.g., In our story today, Billy is embarrassed when his friends sing Happy Birthday to him. What do you think he will do?). Both Inference Training and PReP specify procedures useful during the prereading phases of a comprehension lesson. Other prereading activities focus on the development of specific vocabulary knowledge or concepts related to upcoming selections.

**Vocabulary knowledge**. It is well-documented that there is a strong relationship between measures of vocabulary knowledge and reading comprehension levels (see Anderson & Freebody, 1981 for a review.) What has not been clear is the nature of this relationship. Attempts to raise reading comprehension through instruction in vocabulary have had disappointing results (Ahlfors, 1980; Evans, 1981; Pany & Jenkins, 1978). As discussed in the previous section, we know that background knowledge contributes to reading comprehension. Some have argued, therefore, that the relationship between vocabulary and comprehension is due to the fact that knowledge of vocabulary is actually a measure of background knowledge and should not be thought of as a separate influential factor in reading comprehension (Johnston, 1983). However, more recent intervention studies in vocabulary instruction have succeeded in enhancing students' comprehension (Beck, Perfetti, & Mckeown, 1982; Kameenui, Carnine, & Freschi, 1982; Mckeown, Beck, Omanson, & Perfetti, 1983; Mckeown, Beck, Omanson, & Pople, 1985; Stahl, 1983; Stevens, 1982; Wixson, 1986).

Results of these studies suggest that there are particular characteristics of effective vocabulary instruction. First, instruction should teach the key words for the passages to be read rather than general lists of vocabulary words. In addition, instruction should stress the relationship between the word and the reader's background of experiences, thereby improving both word meanings and background knowledge. Finally, only a few words should be taught for each lesson each week and they should be learned thoroughly.

**Metacognitive knowledge**. In addition to possessing knowledge about the world, learners also possess metacognitive knowledge about the reading process. The term, *metacognition*, has come to be associated with one's understanding and appropriate use of cognitive processes and strategies. These metacognitive processes can be thought of as knowledge of self, knowledge of the task, and self-monitoring (Flavell, 1979; Garner, 1987; McNeil, 1987), or of knowing *that* (declarative knowledge), knowing *how* (procedural knowledge) and knowing *when and why* (conditional knowledge) (Paris, Lipson, & Wixson, 1983). For example, declarative knowledge would include one's knowledge about the task of reading--knowing *that* reading is a process, *that* background is useful, *that* different materials should be read at different rates if meeting different purposes. Procedural knowledge would include knowing *how* to run through the steps in a summary writing routine or *how* to search ahead in the text for clues about the meaning of a word.

Conditional knowledge which is knowing when and why is particularly relevant since that is the context-based, flexible application of learned strategic knowledge. For example, students reflect conditional knowledge when they are able to select an appropriate study strategy when given a goal and a set of materials. Effective use of conditional knowledge depends on knowing oneself as a learner (e.g., "I know I never can remember all these categories of animals if I only read this once. I'd better plan to do something to help me remember this"), having a range of available strategies (e.g., "I could make a list of all the animals and say them to myself to test to see if I remember them. No . . . maybe instead I'll put the animals the book describes into groups. I know that groups are easier to remember than single things"), and knowing when to apply the strategy selected.

Metacognitive knowledge appears to develop through both experience and through instruction. Myers and Paris (1978) interviewed lower and upper elementary good and poor readers and found that the

younger and less able readers had limited understanding of the reading process as compared to the older and more capable readers. For example, they did not know that reading silently is faster than reading aloud, or that retelling a story is more efficiently done at gist level, rather than at verbatim level. Younger and less able readers have also been described as less likely to detect anomalous information as incomprehensible (Bransford, Stein, Shelton, & Owings; 1981) even if there is evidence that they are monitoring their reading (i.e., hesitation, repetition) (Paris & Myers, 1981). It appears that poorer readers concentrate on decoding goals and not comprehension goals.

In a series of studies, Garner and her colleagues (1980, 1981, 1981-82, 1983) found that younger readers and poor comprehenders, in contrast to more mature or successful readers, were more likely to miss inconsistencies that had been deliberately inserted in the text. They continued to read despite the lack of comprehensibility. In addition, they were not likely to possess effective strategies for remediating comprehension failure. In one study, sixth grade *tutors* instructed fourth graders to reread an entire passage when the younger children could not answer a comprehension question, rather than instructing them to *strategically* look back in the article for the appropriate information. In summary, poorer readers have little awareness of the purpose of reading, do not notice blocks to comprehension, and do not employ effective fix-up strategies.

In one line of research designed to enhance students' awareness of strategic reading and the mental activities that underlie skilled reading, Duffy and Roehler and their colleagues argue for process-into-content instruction. That is, they are departing from reading instruction that focuses only on the *content* of a piece of text, that is, traditional comprehension questions, in favor of instruction that teaches students how to make use of knowledge about the reading *process* to make sense of text (Roehler, Duffy & Meloth, 1986). In a series of studies, they have observed reading lessons, evaluating teachers' talk in terms of the explicitness with which they provide instruction in the reading process, for example, giving students information about when and where a particular strategy, such as using context clues, will be used and how this strategy is a *means* to the end of comprehension of content. They then examine the students' awareness of these purposes and procedures through interviews following lessons, and the impact of such an awareness on students' comprehension through various comprehension tests. These data support the idea that when teachers talk *explicitly* about the processes of reading, students' awareness of when to use and how to use strategies increases (Duffy, Roehler, Meloth, Vavrus, Book, Putnam, & Wesselman, 1986; Duffy, Roehler, Sivin, Rackliffe, Book, Meloth, Vavrus, Wesselman, Putnam, & Bassiri, 1987).

Another instructional program designed to enhance students' metacomprehension, or comprehension monitoring, is Palincsar and Brown's reciprocal teaching (1984, 1986). Reciprocal teaching is based upon the premise that the social setting of the instructional situation dramatically affects the development of cognitive strategies (e.g., reading comprehension). Students are taught four strategies to help them detect and fix comprehension difficulties: summarizing, question asking, clarifying, and predicting. Each reading session begins with a discussion to activate relevant background knowledge and, depending upon student independence, some strategy modeling by the teacher. Then, after each segment of text is read by the students, one student, acting in a quasi-teaching role, uses the four strategies with help from peers and the teacher. When summarizing, the student describes in a simple sentence what just happened in the text. In question asking, the student asks his or her peers to answer a question about a main idea from the text. In clarification, the student identifies parts of the text which are unclear, for example, a word whose meaning is unknown, or the use of a referent which is confusing. Predicting requires the student to make an inference about what might happen in the next segment of text. The reciprocal teaching procedure is embedded in ongoing content area lessons such as science or social studies. The goal of instruction, therefore, is to help students internalize the four comprehension-monitoring strategies within the context of reading and remembering classroom materials so that they can use these strategies when reading independently. Indeed, numerous studies with a variety of age-groups have shown this instructional program to dramatically increase students' reading comprehension (for a review, see Brown & Palincsar, 1985). In addition, it is an effect that is maintained over time.

Another approach to enhancing students' metacognitive knowledge is to engage students in rather explicit instruction in strategy use using a curriculum designed specifically for that purpose. Paris and his colleagues (Paris, 1986; Paris, Cross, & Lipson, 1984), also interested in the fact that poorer readers have difficulty detecting comprehension problems and lack the strategies needed to remedy comprehension failures, developed Informed Strategies for Learning (ISL). The program, which includes 16 different lessons aimed at developing students' metacognitive knowledge in reading, uses metaphors to make abstract strategies concrete. For example, to underscore the importance of evaluating a reading task before beginning to read, the metaphor, "Be a reading detective," is used. The metaphor conjures up images of a detective collecting relevant information and trying to discover motives to solve a particular case. Similarly, a good reader gets a sense of both the purpose for reading and the difficulty of a reading task to determine the best prereading approach. Although the ISL instructional intervention did not improve students' performance on traditional standardized reading tests, students did improve on cloze tests and error detection tests.

In summary, there are many options open to enhancing reading comprehension through attention to developing readers' background knowledge, building conceptual knowledge through vocabulary instruction, and enhancing metacognitive knowledge through instruction that focuses on purposive learning of strategies as well as an understanding of conditions under which application of learned strategies would improve comprehension. Such knowledge is applied to acquiring information and building knowledge from text. It is to characteristics of the texts to be read that we now turn.

## Text Characteristics

The learner's role is central to constructing meaning from text; but other factors have important influences too. Fundamental to the interactive view of reading is that comprehension results from the joint construction of meaning between the author of the text and the reader. Research that has examined the nature of the text has focused on a number of variables, including types of materials used for reading instruction (e.g., basal readers), narrative text structures and related instructional strategies, expository text structures (e.g., Mandler & Johnson, 1977; Meyer, 1975; Stein & Glenn, 1979), the degree to which such texts are written and structured in ways that are sensitive to readers' background knowledge and expectations, and instructional interventions for enhancing learning from text. In this section, we focus on these issues as we discuss narrative and expository text.

Meyer and Rice (1984) use the term text structure to refer to "how the ideas in a text are interrelated to convey a message to a reader." One way to think about these interrelationships is to think about the questions that the text was designed to answer. For example, information a reader expects to find in a story includes where the story is taking place, who the main characters are, what the problem is that the main characters have to solve, etc. In contrast, information one might expect to find presented in a science text may be explanations of particular processes. This information invites questions such as, What is being explained? Who or what is involved? What are the steps? Although any given text is usually a combination of different text structures, research suggests that knowledge of the different text structures can be used by the reader to aid comprehension (e.g., Armbruster, Anderson, & Ostertag, 1987; Meyer, Brandt & Bluth, 1980; Raphael & Kirschner, 1985; Taylor 1982; ).

**Narrative text.** Narrative text, or stories, are the basis for reading instruction, particularly in the case of the basal reader. The structure of a story is frequently referred to as story grammar but researchers have coined story schema, story map, story frames and other phrases to communicate the same idea. It has been found that individuals with better knowledge of story grammar tend to be better comprehenders of narrative text (Fitzgerald, 1984; Mandler & Johnson, 1977). Knowledge of story structure helps these readers to understand and remember stories; they are able to anticipate what information is to come, aiding comprehension and they have an organizational structure for connecting pieces of information together, aiding recall.

Several studies have attempted to influence students' reading comprehension through instruction in the elements in a story and their order. For example, Fitzgerald and Spiegel (1983) (also, Spiegel & Fitzgerald, 1986) provided fourth graders, who were poor comprehenders and had low knowledge of story grammar with direct instruction in the *setting* (who, where, when), the beginning (event or problem), the *simple reaction* (thoughts or response to the *beginning*), the *goal* (decision), the *attempt*, (efforts to reach the goal), the *outcome* (results of the attempt), and the *ending* (long range consequences) of a story. Each element of the story was pointed out to students in a well-formed example. Then teacher and students discussed additional examples as well as non-examples for each story part. This instruction succeeded in enhancing students' knowledge of story structure and increasing their reading comprehension.

Gordon and Braun (1983) instructed fifth-grade students in a story schema similar to that used by Spiegel and Fitzgerald (1986), composed of setting, theme, plot (with five subparts) and resolution. The focus of the instruction was to familiarize students with *schema-related* questions, such as, "What does the main character do?" Students were then encouraged to use their knowledge of these schema-related questions to generate story-specific questions in reading unfamiliar texts, and in composing their own narratives. Similarly, Singer and Donlan (1982) taught high-school students a set of story grammar-based questions which aided their comprehension of complex short stories.

Basal texts are used in most American classrooms to teach students to read (Anderson, Osborn & Tierney, 1984; Winograd, Wixson & Lipson, in press). Although comprised mostly of narrative text, basal reader selections have not been found to follow the story grammars mentioned above. In several studies basal reader selections were rewritten to conform to story grammar and to improve coherence through linkage words that explicity stated relationships (Beck, Mckeown, Omanson & Pople, 1984; Brennan, Bridge & Winograd, 1986). The rewritten selections, although slightly more difficult than the original passages according to readability formulas, were, in fact, easier for students to comprehend.

**Expository text.** Research in expository text structures began with descriptive studies of the different types of text structures used to convey information. Much of this work extended that of rhetoriticians who identified such rhetorical structures as invention, arrangement and style (Meyer & Rice, 1984). For example, Meyer (1975) described the set of expository text structures a[illegible]ncluding antecedent/consequent, response, comparison, collection and description.

A second line of descriptive research that extended the work delineating the structures used in informational writing was research on the relationship between such "pure" structures and those actually identifiable in basal and content area materials. Schallert & Tierney (1982) examined social studies materials and found that most texts used a combination of structures within a given selection, rather than the pure forms identified. Similarly, Gallagher and Pearson (1982) found that basal readers tended to use a 'pure' form of expository organization while the content area textbook selections almost always had a combination of forms. In addition, students' recall was higher for the pure form than for the mixed format. Anderson and Armbruster (1984), after analyzing content area textbooks, concluded that these materials are frequently "inconsiderate," that is, they are lacking in terms of using a clear discourse structure, explicitly stating relationships among ideas, addressing one purpose at a time, and having the text fit the knowledge base of the reader.

In spite of the lack of pure structures in existing content area materials, research findings from several studies suggest that skilled reading comprehenders were, in fact, aware of the different structures and appeared to use these as conventions for aiding memory for text read (Englert & Hiebert, 1984; McGee, 1982; Meyer, Brandt & Bluth 1980; Richgels, McGee, Lomax, & Sheard, 19877; Taylor, 1980, 1982). For example, Meyer et al. (1980) found that ninth graders who had knowledge of and used the author's top-level structure recalled more information, including more important information, than those students who did not use the text organization. In a study of sixth grade students using three different measures of structure awareness and two different measures of recall, Richgels et al. (1987) reached the same conclusions. Students who possessed knowledge of the structures that authors used

were better able to understand and remember texts that were well-organized. They also found that sixth grade students were more likely to have knowledge of the comparison/contrast structure than the collection or problem/solution structure. Causation was the structure for which students had the least awareness.

A third line of research on expository text structures involved extending the above findings to intervention studies. Despite the fact that students are better able to recall narrative rather than expository text (Taylor & Berkowitz, 1980), until recently, students have been expected to be able to comprehend informational text, usually content area textbooks, by virtue of receiving reading instruction in predominantly narrative text. Unfortunately, the studies of students' awareness of organizational structures of expository texts suggest that these structures may be unfamiliar to the students, contributing to comprehension difficulties as they enter the upper elementary and middle school grades where the ability to read informational text independently is frequently assumed. On the other hand, since pure structures rarely appear in existing content area materials, researchers questioned the effect of teaching students about text structures. In fact, several studies have now examined the effects of such instruction on students' recall of informational text (Armbruster, Anderson & Ostertag, 1987; Berkowitz, 1986; Flood, Lapp, & Farnan, 1986; McGee & Richgels, 1985; Raphael, Englert & Kirschner, 1986; Taylor, 1982; Taylor & Beach, 1984).

While students representing a range of age groups participated in these studies and a variety of techniques were used, overall, students were learning to identify major categories and supporting information. For example, Taylor (1982) looked at fifth grade students' free recalls of expository passages with clear headings and subheadings, comparing students who received instruction in writing hierarchical summaries with students receiving instruction in answering questions. The students who learned to write summaries had greater free recall of expository text and greater sensitivity to text organization. Taylor and Beach (1984) reported similar results with middle grade subjects.

Using naturally occurring text typical of content area textbook selections, Berkowitz (1986) taught students to generate maps related to content area texts. Maps are graphic representations of the superordinate and subordinate ideas in the passage. The title of the passage is placed in the center of the paper and four to six important categories of information are placed in a clockwise direction around the title. Under each category heading are important ideas for that category, such as, definitions, examples, and details. Each category has a box drawn around it and then it is connected by a line to the title. Berkowitz found that sixth grade students who learned to make use of text organization via map construction performed better on immediate and delayed free recalls of expository text than did students who answered questions, reread text, or studied maps constructed by the researcher, concluding that map construction helped students read and remember content area texts. An important finding from this study, however, is that improving free recall is dependent upon active study strategies. Students who studied maps that they did not construct were not significantly different on their free recalls from students who were not exposed to the text's organization. Furthermore, the free recalls of students in the map construction group were only affected when they actually constructed a map on paper; mental mapping was not enough.

Instruction in specific text structures, such as, problem/solution and comparison/contrast, has also resulted in improved comprehension of expository text. Raphael and Kirschner (1985) instructed middle school students in comprehending social studies material written in a compare/contrast structure. They provided students with a list of four questions specific to this particular text structure: (a) What is being compared or contrasted? (b) On what are they being compared or contrasted? (c) How are they alike? and (d) How are they different? Initially students were presented with brief, clearly written paragraphs found in social studies texts (e.g., colonists' and native Americans' views of land). Students used the guiding questions to identify important information and supporting details and also were taught how to use key words and phrases to locate relevant information.

This instructional program was extended by Raphael, Englert & Kirschner (1986) to aid in both composing and comprehending the additional text structures of problem/solution and explanation. The results of this and other studies (Flood, Lapp, & Farnan, 1986; McGee & Richgels, 1985) suggests that having students become authors of expository text is one vehicle for internalizing the question guides. Students who were writers themselves learned the importance of text structure questions and the key words and phrases used to signal to readers the organization of their text. For example, Armbruster, Anderson, and Ostertag (1987) taught fifth grade students a schematic representation, or frame, of the problem/solution text structure and specific guidelines for writing summaries for a problem/solution text. After instruction, students were more sensitive to social studies selections using the problem/solution text structure and they recalled about 50% more of the top-level ideas on an independently read passage than did students with traditional question-answering instruction.

Instruction in text structure can assist students in the use of other strategies described above. For example, one of the important strategies used in reciprocal teaching (cf. p. 7) is generating predictions about upcoming information in text. Readers with knowledge of different text structures are at an advantage when asked to predict. Assume that readers are learning about how materials can be substituted for one another. They have just read how a rhinestone is *similar* to a diamond in particular ways. Their knowledge of the comparison/contrast text structure can help them predict that the next segment will tell how these two substances are different. They might even make an hypothesis about the particular attribute to be discussed, generating a question such as, "What characteristic do you think a rhinestone and a diamond could be contrasted on?" Instruction in text organization gives teachers and students a shared language that can be used to discuss comprehension processes. In summary, there are a variety of texts with which readers interact. Current basal instructional materials fall short in their ability to prepare students to cope with the range of potential materials to comprehend within and outside of school. More attention needs to be directed at enhancing both the quality and the range of text used in elementary and middle schools. However, attention to learner characteristics and to enhancing the reading materials used during comprehension instruction is not sufficient to change current practice. A better understanding of the third influence on comprehension must develop: an understanding of the social context in which learning to read occurs.

## The Social Context

Where does meaning reside? This question initially was debated in terms of whether meaning existed in a given text with the readers' task defined as decoding the printed symbols to obtain the intended meaning or whether meaning existed in the mind of the reader who read to interpret the author's words in light of his or her own background and experience. Recently, there has been an increased focus on the contribution of the social context in which the reader and text exist. The social context has been defined in terms of the social/historical milieu in which learning occurs (Gavelek, 1986), the philosophical beliefs of the teacher (DeFord, 1986); the cultural background of the students (Au & Kawakami, 1986; Heath, 1982), the participation structures guiding students' involvement in comprehension lessons (Au & Mason, 1981) and so forth. In this section we focus on two of these areas that have a major impact on reading instruction: the students' cultural background and the instructional context most frequently used to teach reading--the basal reading program.

**Cultural knowledge.** One way in which the influence of cultural knowledge on one's comprehension of text can be demonstrated concerns the relationship between cultural and background knowledge (e.g., the example of the American and Indian students who read about each culture's wedding ceremonies). However, the broader influences of cultural rules or norms on school learning in general, and reading in particular, have been demonstrated by researchers with anthropological and/or linguistic orientations. Of concern is the student's sociolinguistic competence, for example, knowing who talks when, to whom, and how. Frequently, speech interactions in classrooms are the avenues through which students not only learn, but also communicate competency in terms of knowledge of content. Therefore, operating under different "rules" may mean that certain students are (a) denied access to learning and (b) are not perceived to know as much as they know. Several studies have shown that

children's home environments and classroom environments may, in fact, run by such different rules that they are culturally incongruent.

Phillips (1972) investigated the poor academic performance of Indian children on the Warm Springs Indian Reservation in Oregon. Teachers reported that Indian children were reluctant to participate in class and, in fact, did so less and less often as time in school increased. Phillips found that Indian children, when compared with non-Indian children, rarely spoke in whole-class or small-group lessons lead by the teacher. However, they initiated individual contact with the teacher when working independently, as frequently, or more frequently than non-Indian children. In addition, when students were working in small student-run groups, Phillips reports that the Indian children "become most fully involved in what they are doing, concentrating completely on their work until it is completed, talking a great deal to one another within the group, and competing, with explicit remarks to that effect, with the other groups" (Phillips, 1972, p. 379). Indian students' willingness to participate, specifically, to participate verbally, and subsequent learning from school lessons, appeared directly related to the way the interaction was organized and who controlled it. The preferred opportunities were those in which students worked in groups, rather than as an individual speaker to an audience, and those in which the student determined participation.

By studying how Indian children acquire skills in their community, Phillips discovered that they first observe successful performance, then, participate in an activity with supervision, and finally, engage in *private* self-testing. The procedure of "learning through public mistakes" that is adopted in the classroom runs counter to this. That is, the norms for Indian children for determining when participation is appropriate at home and in the community are different from those interactions that are expected in many classroom activities.

Heath (1982) also gathered detailed descriptions about language use in different contexts. She looked at the use of questions in the black, working-class community of "Trackton," and in the homes of classroom teachers. The teachers' questions at home with their own children were very similar to the teachers' questions at school. Both of these were different from the questions that parents used in Trackton. Most Trackton caregivers had other adults around while they were at home with their children, so children were not sought-out as conversational partners. Children were not seen as information-givers or question-answerers. When questions were asked of children they tended to be of the analogy variety, for example, "What's that like?" In the teachers' homes, where it was common for the adult to be alone with the preschooler, questions dominated. The most common type of question asked was one in which the questioner has the information being requested of the child, for example, "Where's Missy's nose?" Heath suggests that these different experiences with language use help explain the Trackton students' lack of participation in classroom interactions.

One of the most influential of the cultural congruence studies has probably been the Kamehameha Early Education Project (KEEP). Au and Jordan (1981), concerned about the poor academic performance of native Hawaiian children, studied and documented differential interaction patterns between the children's conversation at home and reading instruction at school. Reading lessons were redesigned so as to allow children to make use of the "talk-story" pattern they were accustomed to. That is, during the telling of a story, students' contributions could overlap, as in "talk-story," rather than proceeding by the one-at-a-time turn-taking that was part of their previous instruction. Direct comprehension instruction conducted in this manner resulted in significant gains in students' reading comprehension.

Sociolinguistic studies can be helpful in explaining the learning difficulties that some students experience. If cultural incongruity results in poor academic performance by a particular group of students, changes in the instructional environment are in order. However, the types of changes needed are not self-evident. In the case of the Indian children studied by Phillips, she reported that some teachers, particularly in the lower elementary grades, did adapt their teaching to accommodate the preferences of the Indian children. For example, teachers had students work on group projects rather

than reading text and asking and answering questions, or, giving students the opportunity to ask the teacher questions privately rather than in front of the class. While this instructional modification seems laudable and a step in the right direction, Phillips also raises the point that "by doing so, they [teachers] are avoiding teaching the Indian children how to communicate in precisely the contexts in which they are least able but most need to learn if they are to 'do well in school'" (Phillips, 1972, p. 383). Despite the lack of consensus concerning application of the research, the picture that emerges from the sociolinguistic studies is one which is commensurate with the interactional view of reading. Reading performance is clearly influenced by a variety of factors, and performance at any one point in time, whether in a reading group which runs by unfamiliar rules or in a testing situation, should not be equated with an individual's potential for reading comprehension.

**Instructional context: Basal reading programs.** Basal reading programs constitute the most frequent setting in which students learn to read. The basal reading programs typically used consist of the students' basal reader, usually a collection of selections dominated by narrative text, a teacher's manual which provides the teacher with specific procedures for instruction from introduction of new vocabulary (often as many as 20 words per story) to the set of questions to ask throughout the text to the skills that should be taught following reading of the story, workbooks which provide students with tasks designed to give them independent practice in their reading skills, and accompanying materials such as flashcards, charts, and filmstrips.

It has been well-documented that teachers adhere rather firmly to the teaching of reading as it is prescribed in the basal reader series (Durkin, 1984; Osborn 1984b; Shannon, 1983). In addition, it has been suggested that the reading activities delineated in these basal reader series, while they may be *related* to teaching comprehension, do not necessarily *teach* comprehension (Durkin 1978-79, 1981). Durkin found that fewer than 50 of the 17,997 minutes of observations of reading lessons contained any comprehension instruction. The most commonly observed behavior was assessment followed by giving and helping with assigned worksheets. Allington (1983) found that students in different ability-based reading groups receive slightly *different* instruction. Unfortunately, students in low-ability reading groups experience even less comprehension instruction than students in the higher groups. They usually read orally while the higher groups read silently, and the focus is on word identification rather than sense-making.

When examining the basal manuals themselves, Durkin (1981) noted that the length of a directive which might be classified as *instructive* was sometimes only a single sentence, for example, "remind students that the main idea is the most important idea in the paragraph." Durkin did find one difference between teachers' instruction and basal manuals; manuals were more prone to suggest application activities than teachers were to employ them. That is, the manuals suggested that teachers guide students to complete an example of an exercise for a given skill. However, it is important to note that when teachers did use application activities it was usually in lieu of, not in addition to, instruction. Students were given a chance to show that they can perform a skill correctly instead of instruction about what the skill is and how one applies it. In addition, Durkin found that manuals rarely offer any suggestions for what to do when students failed; instead, more application opportunities were provided.

Beck and McKeown (1981, 1987) analyzed comprehension instruction in basal manuals from a somewhat different perspective from Durkin. Guided by the concept of story grammars, they examined the support features of the guided reading lesson (suggestions for before, during, and after reading the selection) and found them to be problematic. First, pre-reading suggestions for building background knowledge frequently focused students' attention on aspects of the selection that were not central to understanding the story. In addition, after-reading questions often represented a randomly accumulated quiz of unrelated details rather than a carefully planned sequence of questions designed to elucidate the causal connections between major story elements and events.

Similar research has been conducted on content area materials, with similar results. Armbruster and Gudbrandsen (1986) found that teachers' manuals for social studies' programs were as negligent as

basal reader manuals in teaching comprehension of informational text. Not surprisingly, Neilsen, Rennie and Connel (1982) found little comprehension instruction occurring in elementary social studies' lessons.

In addition to problems in the materials and corresponding instruction using basal and content area texts, other research has documented problems with accompanying workbooks and the effects of using such materials. Osborn (1984a) found students' workbooks to be lacking in their contribution to developing skill in reading comprehension. For example, none of the workbooks in the six basal series she examined required students to "integrate their own reactions into their workbook responses" (p. 109), rather focusing on specific practice in particular subskills. There were also few instances of workbook tasks that require students to read a connected piece of text and apply the comprehension concepts they have been taught. In a related study Anderson, Brubaker, Alleman-Brooks, & Duffy (1985) found little understanding on the part of first graders as to why they were doing their seatwork assignments. For the most part, they interpreted these activities as ends in themselves; the goal was to get finished. In addition, students who experienced difficulty with the independent tasks rarely received informative feedback from the teacher on how to address these problems. It seems reasonable then to begin to question the value of reading seatwork, an integral part of basal reading programs.

Given these problems in the materials and current instructional practices, it is reasonable to ask whether instructional alternatives exist. Instructional research of the past decade has provided a great deal of support and suggestions related to improved comprehension instruction, with suggestions for alternative instructional models, guidelines for teacher/student dialogue, and a focus on developing independent readers.

**Explicit instruction model.** Based on both the reading process research and the intervention studies cited in the previous sections, and the descriptive studies of current classroom reading instruction, the view of reading comprehension instruction is shifting. It is not merely a call for *more* instruction (one way to apply Durkin's findings), but a call for *different* instruction. One current instructional model focuses on the importance of teachers being *explicit* in their comprehension instruction (see Anderson, in press, for a review of the explicit instruction model). This model centers around the *transfer of control* of the reading process from the teacher (the experienced reader) to the student (the naive reader), whether the student is a kindergartner or first grader learning to read his/her first primer, a fourth grader learning to comprehend content area textbooks, or a high school student learning to analyze literature. Pearson (1985) refers to this as the *gradual release of responsibility* for a task. The goal of instruction, then, is to set the stage and bring about this transfer of control of comprehension processes, not merely to assess students' comprehension ability.

Several concepts are key to this view of instruction. They are: explicit explanation, modeling, and scaffolding. Many of the instructional methods for the intervention studies mentioned in previous sections have some or all of the instructional characteristics to be discussed here. When appropriate, specific programs will be described as illustrations. An often-cited and helpful graphic of this framework is found in Pearson & Gallagher (1983, p. 337) and is reproduced below:

**[Insert Figure 1 about here.]**

The diagonal line on the graph represents the transition from total teacher responsibility (the far left) to total student responsibility (the far right). When the teacher is taking all or most of the responsibility for task completion, he or she is explaining or modeling the desired application of some strategy. When the student is taking all or most of that responsibility, he or she is independently applying that strategy. In between those two points comes the gradual release of responsibility from teacher to student.

**Explicit explanation.** Duffy, Roehler and their colleagues' work (for example, Duffy & Roehler, 1987a; Duffy & Roehler, 1987b; Duffy, Roehler, & Hermann, 1988; Roehler & Duffy, 1986) has helped focus

attention on the effects of teachers' explanations on students' metacognitive knowledge about the skills being taught in reading lessons. Included as part of an explicit explanation is (a) why the strategy should be learned, (b) what the strategy is, (c) how to use the strategy, (d) when and where the strategy is to be used, and (e) how to evaluate use of the strategy (Baumann & Schmitt, 1986; Duffy, Roehler, Meloth, & Vavrus, 1986; Winograd & Hare, in press). This is based on the assumption that students learn what they are taught--thus, if we wish them to understand the purpose as well as the procedures for a particular strategy, we must inform them of both (Brown, Campione & Day, 1981). While direct instruction has also been a popular concept as a result of the teacher effectiveness research (see for example, Brophy & Good, 1986), proponents of explicit explanation are focusing on being direct about the *conditional* knowledge necessary for effective strategy use, as well as the declarative and procedural components of direct instruction. In addition, because of the focus on conditional knowledge, the teaching of procedural knowledge, the usual fare of traditional reading skill instruction, is more flexible. That is, how one chooses to use a particular strategy depends upon the particular situation. This model of explicit explanation, then, addresses the necessity of possessing metacognitive knowledge for proficient reading (Paris, Lipson, & Wixson, 1983).

The following example of a lesson teaching students to "find the main idea" is illustrative of an explicit explanation:

> Finding the main idea means summarizing what you've read, deciding what's most important in the piece of text. It's a helpful thing to learn to do because it can let you know if you're having trouble understanding the author. Sometimes we read on and on and then find out that we aren't sure what we've read; we're not really comprehending or understanding what the author is trying to say. Taking the time to find the main idea, maybe after every paragraph when we're reading something with a lot of words that seem new, or maybe after every page when the words are more familiar, will help us discover problems so we can fix them.

After the above explanation, students would be introduced to *how* to find the main idea, not as an inflexible series of steps, but as a series of alternative ways of finding the main idea. The emphasis on the flexible use of strategies is what differentiates this model from the usual skill instruction. Students learn not only a flexible procedure but they understand why and when to use it. Additionally, students learn to evaluate the success of the strategy in terms of improving their comprehension of text.

**Modeling.** Teacher modeling of thinking processes is part of the explicit explanation model described above. Decisions made by the reader concerning strategy use are usually invisible and it is the task of the teacher to make these invisible processes visible for students. Duffy and Roehler refer to this as mental modeling, while Palincsar and Brown speak of the teacher as a cognitive model. In neither case is the teacher merely modeling a correct answer, for example, "The main idea for this selection is . . .," or, "A good clarification question is . . ." Rather, the teacher makes observable for students the thinking that leads to an answer or idea. When modeling how to find the main idea the teacher might say,

> I want to be sure I have an idea about what I've read so far before I go on. Otherwise I might have trouble understanding what the author is trying to tell me later on. So I'm going to summarize what I've read, or, state the main idea. One word that was repeated a lot in this piece of text was snakes so I know this was telling me something about snakes. Usually, when I think about snakes I think of snake *bites* but that was never mentioned here. Instead, the author described a lot of different places, sandy deserts, then mountains, then jungles. And the author mentioned the snakes that live there. So I think the main idea is that snakes live in a lot of different places. Places that are really dry or really cold or really hot and rainy. Yuck, I wonder if there are snakes in Michigan?

Similarly, in the Cognitive Strategy in Writing (CSIW) Project of the Institute for Research on Teaching (Englert, Raphael, Anderson, Anthony, Fear, & Gregg, in press) students learned to use informational text structures to guide their composing and comprehending of text. As part of the instruction, teachers used think-alouds to introduce students to different strategies related to text generation. One way in which thinking aloud played an important part was introducing students to strategies for selecting topics. The following think-aloud illustrates the instruction that occurred:

> I thought about some of the things that I did over Christmas vacation like opening presents, playing some games, cooking. I decided that I knew enough about all of these. Then I remembered how much we went cross country skiing and how good I got at it. I think I can explain it to someone else, and that it is something that other people would want to know about.

**Scaffolding.** Recently, there has been increased emphasis on the importance of developing *independent* readers, readers able to apply strategies learned across a variety of contexts. The term, scaffolded instruction, has been coined to underscore the *temporary, adjustable*, and *supportive* aspects of instruction. Like a scaffold, the teacher's role in acquisition of new concepts is to provide the appropriate amount of support needed by the learner to implement a skill or strategy. Over time, the teacher makes deliberate attempts to release task responsibility to the students, gradually reducing, adjusting, and eventually removing the support initially provided. Recall that studies of existing comprehension instruction (i.e., Durkin, 1978-79, 1981) revealed that teachers used basals and worksheets in such a way as to give students "massive doses of unguided practice" (Pearson, 1984b, p. 226). The notion of scaffolding is in direct contrast to this. Guided practice is a dynamic and interactive process between teacher and students. As such, it is the most unpredictable part of the explicit instruction model and the most difficult to explain (Pearson & Dole, 1987).

One of the clearest examples of scaffolded instruction is seen in reciprocal teaching. There are several key features of reciprocal teaching which contribute to this. First, students are reading existing text to comprehend an entire selection. The task is not broken into smaller pieces; rather, the teacher helps reduce the students' load through guiding the students' question asking, predicting, and so forth. Thus, the task is essentially identical to what students will do independently at some future point.

A second key feature is that each student in the group takes a turn at being "teacher" to use the strategies of summarizing, question asking, clarifying and predicting. Thus, individual and group feedback occurs throughout the lesson in support of the students' application of learned strategies. Third, reciprocal teaching depends on dialogue around the students' strategy use (Palincsar, 1986). Through the dialogue the teacher assesses the student's understanding of and ability to use each strategy. Depending on the student's response, the teacher may ask another question, clarify the strategy by giving an example, partially perform the task for the student and let him or her finish it, etc. For example, after the group has received explicit explanation for summarizing (presented as a "finding the main idea" task above), and the teacher has modeled his/her thinking about this strategy, the students are ready to use the strategy with guidance. If a student is playing teacher and is unable to summarize the piece of text just read about how humans living in space need life support systems, the teacher might ask specifically, "What kind of city is being described here? Is it like your neighborhood or is it like a city in the Old West, like we read about last week?" She may ask more generally, "Is there any word or words that you read several times in different sentences?" Gradually, the teacher leads the student to correctly summarize the text, providing prompts and referring back to the initial explanation when appropriate. This dialogue allows teachers to respond to individual differences in students' understanding for each of the strategies taught.

Similarly, through analyses of transcripts of small-group reading lessons, Roehler & Duffy (1986) found that the most successful explicit teachers use interactive or mediated instruction, an activity the researchers refer to as *responsive elaboration*. In responsive elaboration, teachers engage in many specific activities, such as questioning, assessing student understanding, and elaborating and clarifying

concepts (e.g., giving examples or analogies as well as further explanation). These teacher-student interactions, therefore, are very much like those observed in the dialogues of teachers using reciprocal teaching.

Some of the instructional interventions mentioned previously have made use of support materials as well as dialogue to help students internalize and use strategies effectively. Ogle (1986, 1987) has developed a worksheet for her K-W-L program (similar to Wong & Au's C-T-A program) to help students use effective strategies while reading a piece of informational text. For example, students prepare for reading by having a discussion and then filling in their "What I Know" and "What I Want To Learn," sections of their paper. The "What I Learned" section triggers students to take notes while reading or to summarize after reading, the ideas from the text. In the K-W-L PLUS version, students are helped to develop understanding of text organization. First, students categorize the information listed under their "What I Learned" section. For example, after reading about a particular animal, a student may place a D next to all the statements that are descriptions or an L next to statements about location, then these categories are used to construct a map with the explanatory details listed under the category headings. In this way, the information on the worksheet assists or scaffolds students in constructing their map which can then be used as an aid for writing a summary.

Thus, while current research suggests that there are severe limitations in terms of current materials used to teach students to read, we are fortunate to have a wealth of information about effective instruction that transcends the use of a particular set of instructional materials.

## Concluding Remarks

In our review, we have attempted to provide insight from current research that identifies ways in which readers, text, and context interact and influence children's comprehension of text. What is clear is that while much is known about the comprehension process and important instructional features related to comprehension instruction, there still exist wide gaps between our current knowledge and ongoing practice. What is also clear is that teachers and teacher educators have the knowledge available to make large-scale reform in terms of both materials and instruction. Teachers who are knowledgeable about the research described in this review can make significant changes in the nature of reading comprehension instruction. In fact, there are a growing number of places where such change has occurred, for example, the Benchmark School in Media, Pennsylvania (Gaskins, in press; Samuels & Pearson, 1988); the Kamehameha Early Education Program in Honolulu, Hawaii (Tharp, 1982); and the Content Reading Instruction and Study Strategies program in Kalispell, Montana (Santa, 1988). Increased knowledge can also provide the support for those in influential positions such as curriculum-adoption committees who wish to see better materials available for use in classrooms. Finally, teacher educators have both the power and the means to empower our teachers and, in turn, their students, to become independent readers and critical thinkers as they read a variety of materials, in a variety of contexts, and for a variety of purposes.

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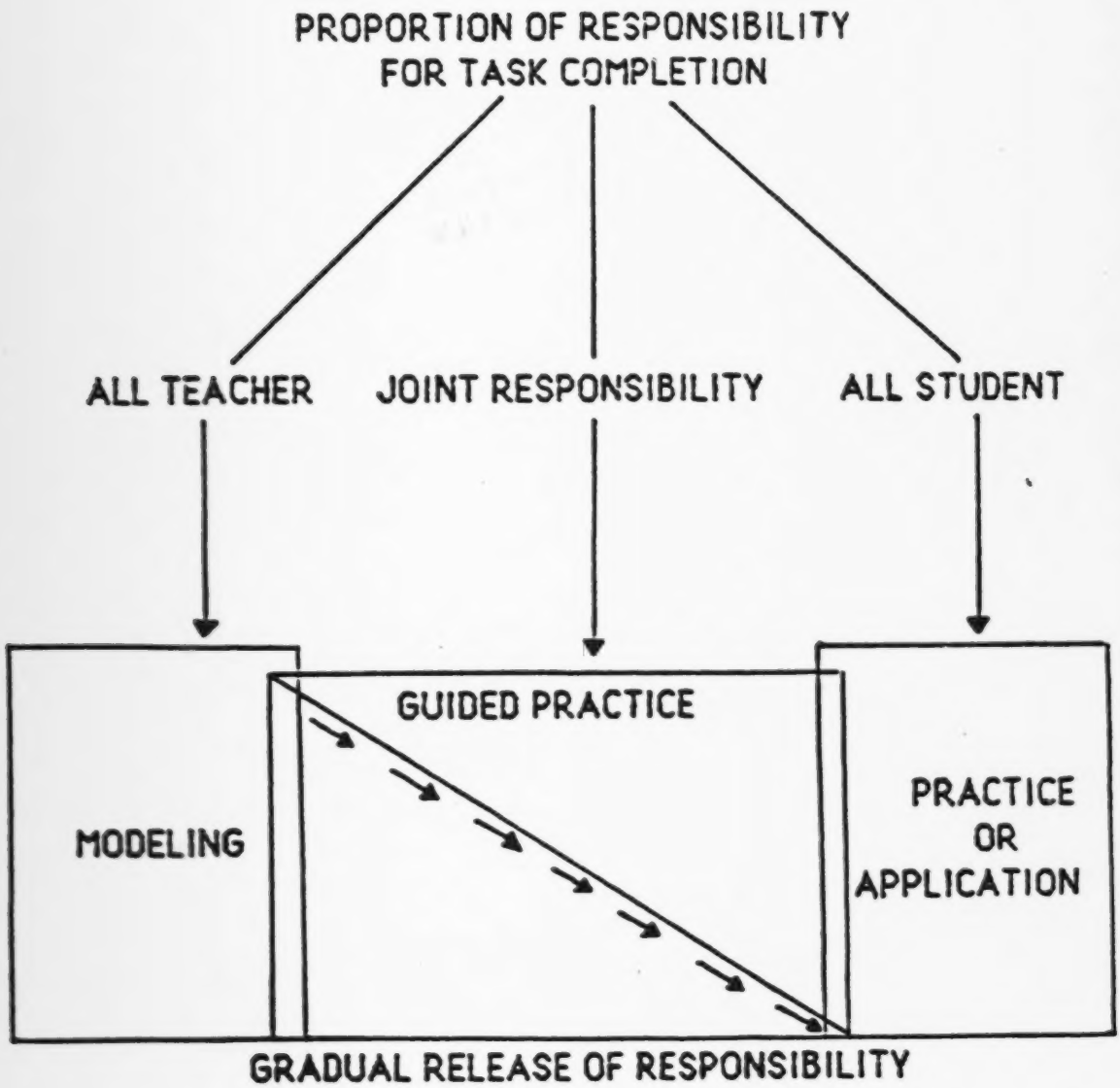
PROPORTION OF RESPONSIBILITY
FOR TASK COMPLETION
ALL TEACHER
JOINT RESPONSIBILITY
ALL STUDENT
GUIDED PRACTICE
MODELING
PRACTICE
OR
APPLICATION
GRADUAL RELEASE OF RESPONSIBILITY

**Figure 1**